

REMARKS

Reconsideration and allowance are requested.

The claims stand rejected for obviousness under 35 U.S.C. §103 based on U.S. patent 6,907,598 to Fraser in view of pages A42-A44 of the textbook Hennessy et al., *Computer Architecture: A Quantitative Approach*. This rejection is respectfully traversed.

In the "Response to Arguments" section of the Office Action, the Examiner states "the Examiner and the Applicant appear to be in agreement that the program counter of Fraser, during execution of an echo instruction, does not store the address in memory at which the echo instruction itself is stored, but instead stores an address of an instruction within the block of instructions indicated by the Echo instruction." But the Examiner considers that the wording of the previously-submitted claim 1 does not clearly specify this distinction. Accordingly, the independent claims have been amended to specify "wherein when executing said block of two or more program instructions, said program counter register is configured to store an address indicative of a memory location where said execute block instruction is stored and said block counter register is configured to store...."

This amendment is similar to the clarifying amendment suggested by the Examiner on page 15 lines 4-6 of the Office Action. The exact suggestion, to "store an address in memory where said execute block instruction is stored," was not used because of the need to cover the possibility that the program counter could store a pointer to the memory address at which the execute block instruction is stored instead of storing the memory address *per se*.

Although the Examiner concedes the novelty of newly-amended claim 1, he raises an obviousness question based on a combination of Fraser and Hennessey. The problem with this proposed combination is that Fraser *teaches away* from storing an address indicative of a

memory location where the execute block instruction is stored (as recited in the independent claims) by teaching that during execution of the Echo instruction (the alleged counterpart of the claimed block instruction), the program counter is changed from a value corresponding to the location at which the Echo instruction is stored to a “displacement value” specifying the start of the block of instructions to be repeated. Given this teaching away, the person or ordinary skill in the art would not combine the teachings of Hennessey and Fraser as proposed.

Furthermore, neither Fraser nor Hennessey discloses that the value stored in the program counter register throughout execution of the two or more instructions of the block is an address indicative of the memory location at which the execute block instruction is stored. Accordingly, even if the skilled person did combine the teaching of Hennessey with Fraser, that person would still not disclose all the features of the independent claims.

The technology defined in the independent claims provides for easier integration of execute block instructions with existing program code for exception handling. The existing program counter behavior does not need to be sufficiently altered to compensate for inclusion of the embedded block instructions. In particular, there is no need to save the current program counter to a temporary program counter stack upon execution of the execute block instruction and to restore the program counter value from a temporary program counter stack following execution of the execute block instruction. Instead, a program counter register stores an address indicative of the memory location of the execute block instruction itself so that the program counter only needs to be incremented following execution of the execute block instruction. The separate block counter register monitors which of the two or more instructions within the block is currently being executed while the value stored in the program counter register remains static

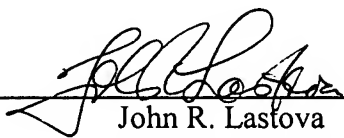
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during execution of the plurality of instructions of the embedded block. These advantages are not recognized by Fraser or Hennessey.

The application is in condition for allowance. An early notice to that effect is respectfully submitted.

Respectfully submitted,

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